Clark County Information Technology

Solution Design Document

Project:	BLITZ
Project Number:	
Project Architect:	**John Locke**
Project Manager:	**Dan Walker**
Version:	**2.2.0**
Date:	April 14, 2015

DOCUMENT HISTORY

Document Revision	Date	Revised By	Changes/Notes	Corresponding Document
1.0.0	2/10/14	John Locke	Initial	
1.1.0	2/10/14	John Locke	Changes made after architecture review	
1.2.0	6/5/14	John Locke	Changes for new environments requested by customer	
1.3.0	6/9/14	John Locke	Finalization of Architecture after conference call with Accela Engineering	
2.0.0	7/1/14	John Locke	Changes for using MS SQL	
2.1.0	3/4/2015	Noemi Esparza	Updated Dev and QA diagrams and sever lists	CHG0014897
2.2.0	3/25/15	Dan Walker	Updated diagrams, server chart, minor editing. We have had an additional Sandbox environment requested. We know have: Production, 2 QA (QA & Training), 3 Dev (Development, Conversion, Sandbox)	

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1 SCOPE

1.1 Solution Scope

The scope is to provide Infrastructure architecture for the BLITZ project. We will be architecting for the Accela system. The solutions included are the Accela Civic Cloud, Accela Application Services, and Accela Automation Services.

1.2 Design Objectives and Constraints

The design objectives are to build a robust solution for our business customers. One objective is to replace the CLIPS system currently in place. The solution should be supportable for up to 15 years. This will require hardware replacement on 4 year intervals. The major constraint was the short time we had to prepare and review the solutions before designing.

1.3 References

\\ccentnas1\IT-Public\IT Infrastructure Team\Infrastructure Projects\BLITZ\603010_PH2_Tech_Accela.pdf

\\ccentnas1\IT-Public\IT Infrastructure Team\Infrastructure Projects\BLITZ\Accela Hardware Requirements.pdf

\\ccentnas1\IT-Public\IT Infrastructure Team\Infrastructure Projects\BLITZ\Accela System Architecture.docx

2 HIGH LEVEL DESIGN

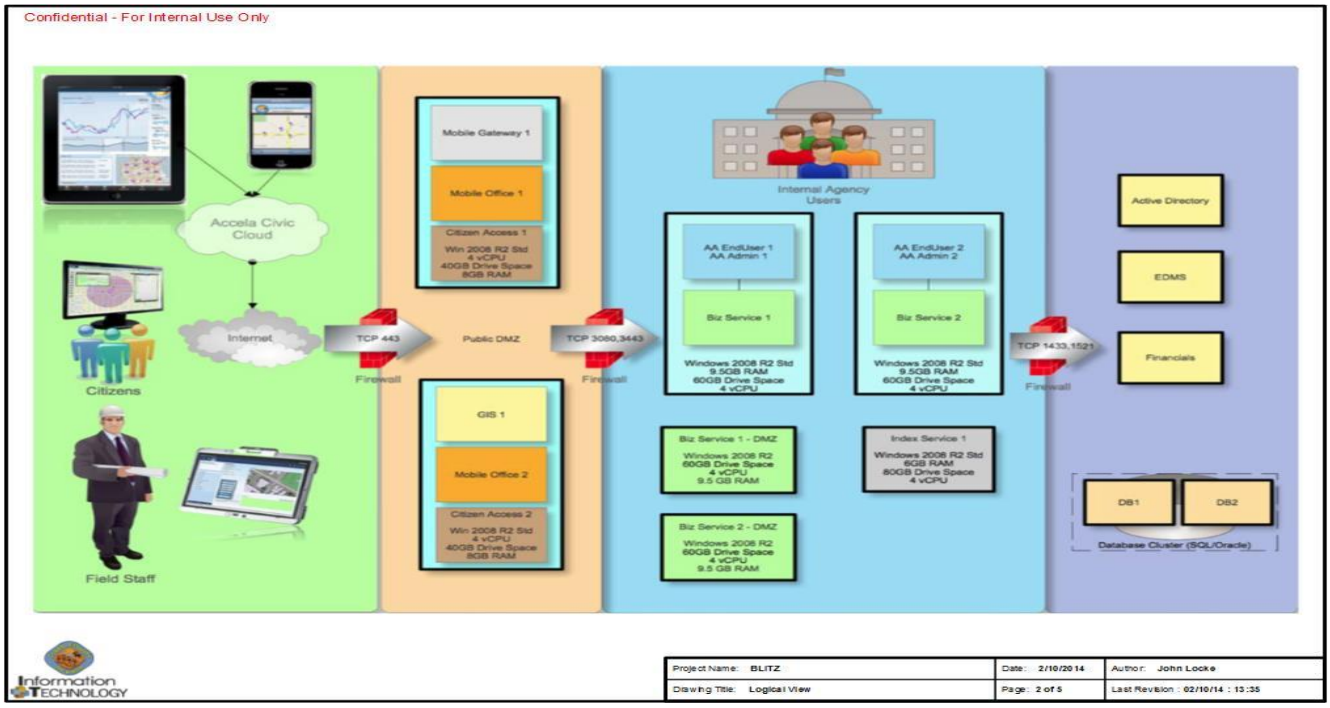
2.1 Design Choices

We made two major choices in architecting this solution.

The first decision is the use of private cloud technology. For the forward facing web servers we decided to add resources to the Enterprise DMZ cloud and dedicate those resources to the BLITZ servers. For the services within the internal network, we decided on a private cloud to support the BLITZ solution. This gives us the flexibility of a cloud solution with the dedicate resources of a physical solution.

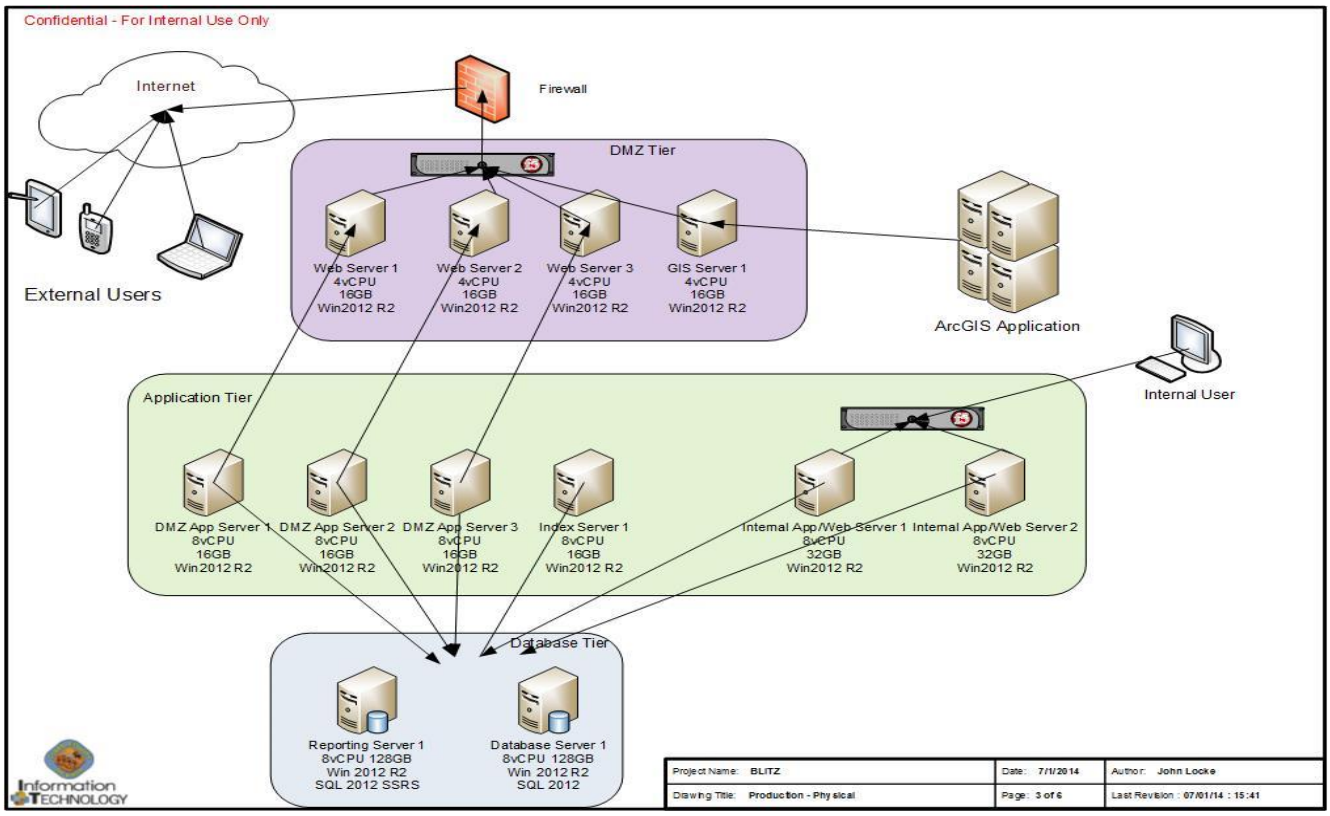
The second decision is Microsoft SQL for the database solution. The major reason for the decision is the that Microsoft SQL is our enterprise standard. We did decide to form two resource pools for the SQL resources. The development and QA databases will reside on one pool and use MSDN licensing and the production databases will reside on the other pool and use Enterprise licenses.

2.2 System/Functional/Logical View

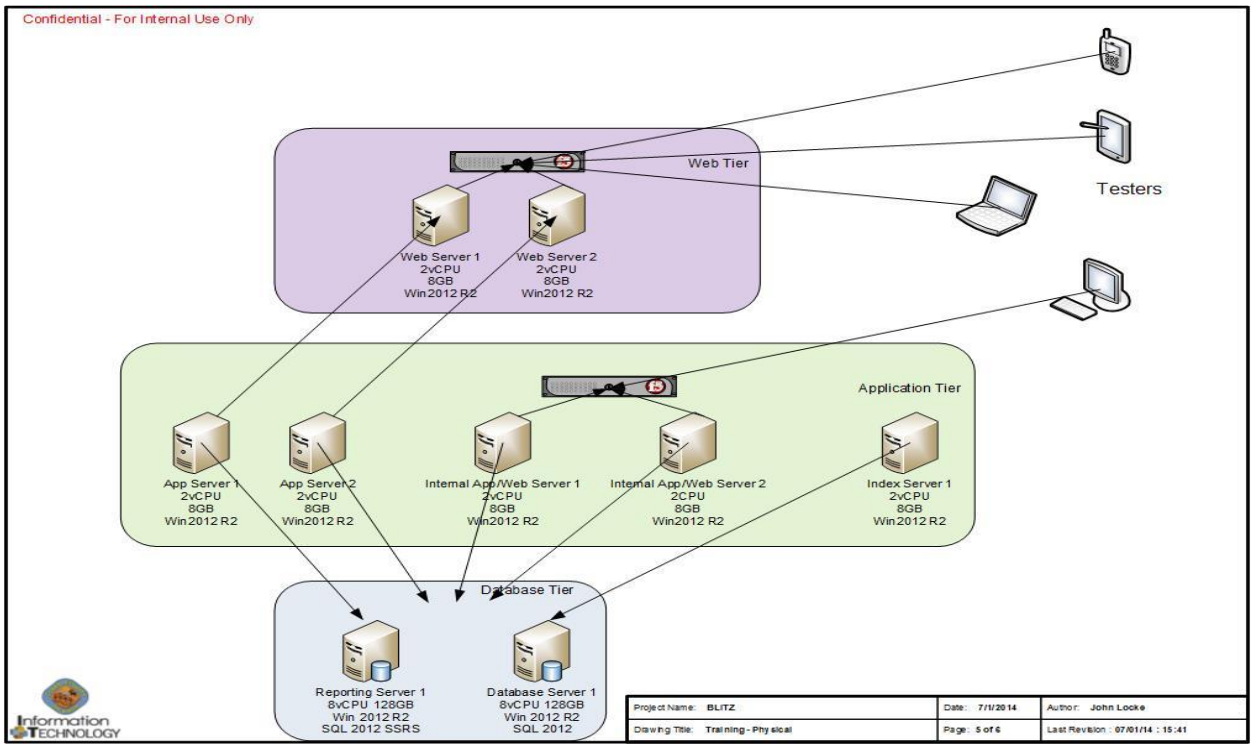


2.3 Deployment/Physical View

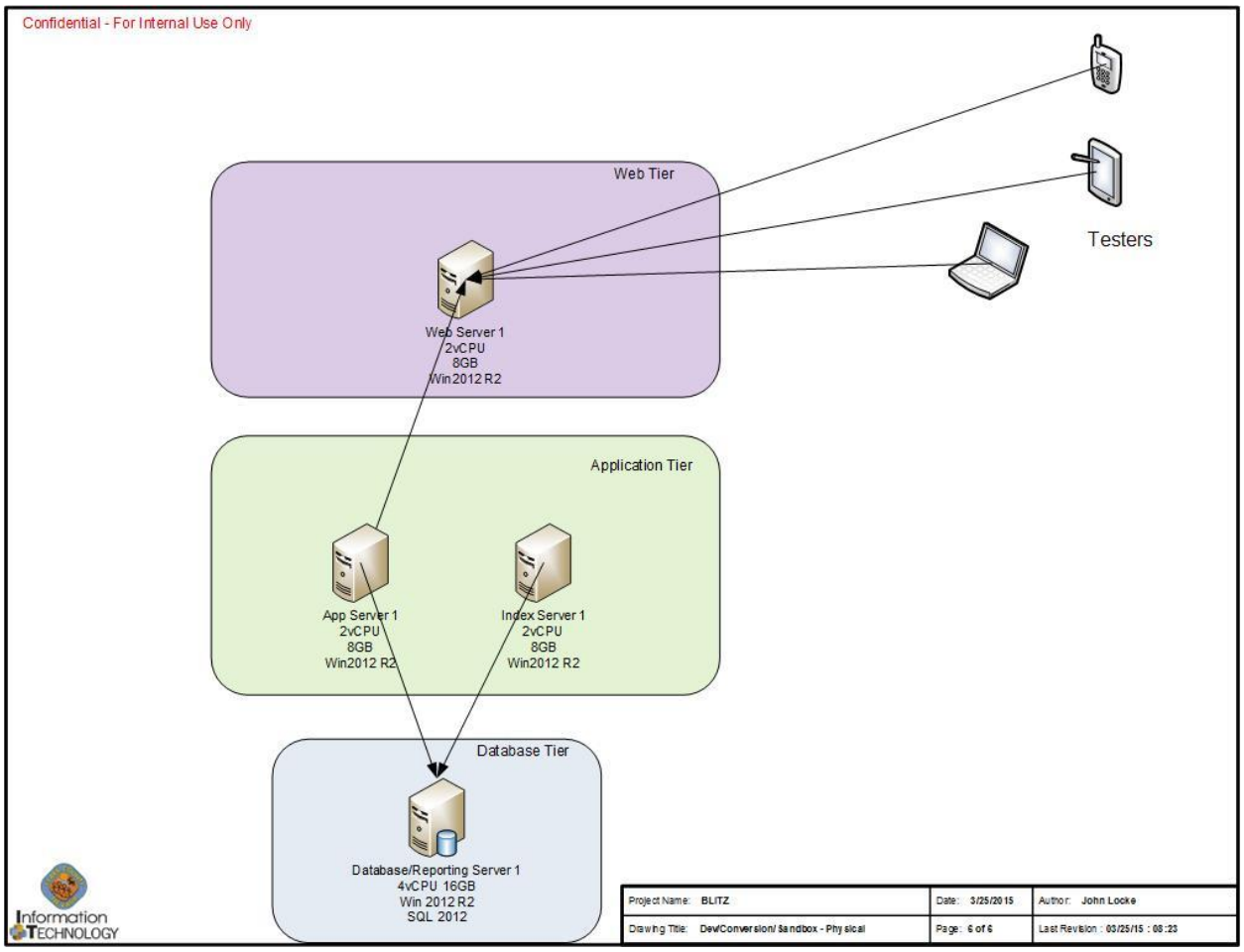
2.3.1 Production



2.3.2 Training and QA (2 Identical Environments)



2.3.3 Development, Conversion, and Sandbox (3 identical Environments)



3 DETAILED DESIGN

3.1 Server Details

Virtual Servers

Server	CPU	Memory	C:	D:	Environment	Purpose	Cluster
DMZWebServer1	4	16	60	60	Production	Web	DMZ
DMZWebServer2	4	16	60	60	Production	Web	DMZ
DMZWebServer3	4	16	60	60	Production	Web	DMZ
DMZGISServer1	4	16	60	80	Production	Web	DMZ
INTAppServerForDMZ1	8	16	60	80	Production	Application	BLITZ
INTAppServerForDMZ2	8	16	60	80	Production	Application	BLITZ
INTAppServerForDMZ3	8	16	60	80	Production	Application	BLITZ
InternalWebAppServer1	8	32	60	80	Production	Application	BLITZ

InternalWebAppServer2	8	32	60	80	Production	Application	BLITZ
IndexServer1	8	16	60	80	Production	Application	BLITZ
ProdDBServer1	8	128	60	80	Production	Database	BLITZ DB Prod
ProdRptServer1	8	128	60	80	Production	Reporting	BLITZ DB Prod
DMZWebServer1	2	8	60	80	Training	Application	DMZ
DMZWebServer2	2	8	60	80	Training	Application	DMZ
INTAppServerForDMZ1	2	8	60	80	Training	Application	BLITZ
INTAppServerForDMZ2	2	8	60	80	Training	Application	BLITZ
InternalWebAppServer1	2	8	60	80	Training	Application	BLITZ
InternalWebAppServer2	2	8	60	80	Training	Application	BLITZ
IndexServer1	2	8	60	80	Training	Application	BLITZ
TrainDBServer1	8	128	60	80	Training	Database	BLITZ DB Dev/ QA
TrainRptServer1	8	128	60	80	Training	Reporting	BLITZ DB Dev/QA
DMZWebServer1	2	8	60	80	QA	Application	DMZ
DMZWebServer2	2	8	60	80	QA	Application	DMZ
INTAppServerForDMZ1	2	8	60	80	QA	Application	BLITZ
INTAppServerForDMZ2	2	8	60	80	QA	Application	BLITZ
InternalWebAppServer1	2	8	60	80	QA	Application	BLITZ
InternalWebAppServer2	2	8	60	80	QA	Application	BLITZ
IndexServer1	2	8	60	80	QA	Application	BLITZ
QADBServer1	8	128	60	80	QA	Database	BLITZ DB Dev/QA
QARptServer1	8	128	60	80	QA	Reporting	BLITZ DB Dev/QA
DMZWebServer1	2	8	60	60	Conversion	Web	DMZ
InternalWebAppServer1+ INTAppServerForDMZ1	2	8	60	80	Conversion	Application	BLITZ
IndexServer1	2	8	60	80	Conversion	Application	BLITZ
ConDBServer1/ConRptServer1	4	64	60	80	Conversion	Database	BLITZ DB Dev/QA
DMZWebServer1	2	8	60	60	Development	Web	DMZ
InternalWebAppServer1+ INTAppServerForDMZ1	2	8	60	80	Development	Application	BLITZ
IndexServer1	2	8	60	80	Development	Application	BLITZ
ConDBServer1/ConRptServer1	4	16	60	80	Development	Database	BLITZ DB Dev/QA
DMZWebServer1	2	8	60	60	Sandbox	Web	DMZ
InternalWebAppServer1+ INTAppServerForDMZ1	2	8	60	80	Sandbox	Application	BLITZ
IndexServer1	2	8	60	80	Sandbox	Application	BLITZ
ConDBServer1/ConRptServer1	4	16	60	80	Sandbox80	Database	BLITZ DB Dev/QA

Physical Servers

Name	Model	CPU	Memory	Disk	Cluster
DMZVMHostxx	Dell 720	2x10x2.93GHz	256	2x146GB	DMZ
DMZVMHostxx	Dell 720	2x10x2.93GHz	256	2x146GB	DMZ
BlitzVMHost1	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ
BlitzVMHost2	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ
BlitzVMHost3	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ
BlitzVMHost4	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ
BlitzVMHost5	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ
BlitzVMHost6	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ
BlitzQAVMHost1	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Dev/QA Farm
BlitzQAVMHost2	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Dev/QA Farm
BlitzQAVMHost3	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Dev/QA Farm
BlitzQAVMHost4	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Dev/QA Farm
BlitzQAVMHost5	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Dev/QA Farm
BlitzDBVMHost1	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Prod
BlitzDBVMHost2	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Prod
BlitzDBVMHost3	Dell 720	2x10x2.93GHz	256	2x146GB	BLITZ DB Prod

3.2 Database & Reporting

Server	**Storage**	**Environment**	**Description**
ConDBServer1/ConRptServer1		Conversion	Database and Reporting
DevDBServer1/DevRptServer1		Development	Database and Reporting
SBoxDBServer1/SBoxRptServer1		Sandbox	Database and Reporting
ProdDBServer1		Production	Database
ProdRptServer1		Production	Reporting
QADBServer1		QA	Database
QARptServer1		QA	Reporting
TrainDBServer1		Training	Database
TrainRptServer1		Training	Reporting

3.3 Backup Services

Backup requirements will be defined at a later time.

3.4 Network Services

Permit/Deny	Protocol	Source	Destination	Source Port	Dest Port	Service
Permit	TCP	Blitz External Web Site	WWW	443	443	HTTPS
Permit	TCP	Web Servers	App Servers	3080	3080	TCP
Permit	TCP	Web Server	App Servers	3443	3443	TCP
Permit	TCP	App Server	DB	1521	1521	TCP

3.5 Monitoring Services

Monitoring will be defined at a later time.

OPERATIONAL

Operational Requirements will defined at a later time.

4 DESIGN CONSIDERATIONS AND ASSUMPTIONS

The major considerations in the solution is that we only have the documentation provider by the vendor and short turnaround time needed for this architecture. Without two-way communication, we have assumed certain variables.

Assumptions Made:

- Authentication methods will be Active Directory for internal users and form based for external users.
- No other SQL tools or licensing will be needed except what is listed.
- Clark County standard backup and retention policies for databases and servers are adequate.

5 VARIATIONS ON ENTERPRISE STANDARDS

None